

SSSTF PROJECT DOCUMENT REVIEW RECORD

DOCUMENT TITLE/DESCRIPTION: STAGING, STORAGE, SIZING, AND TREATMENT FACILITY DRAFT 30% DESIGN
DOE/ID-10825, November 2000

DATE: 11/30/2000 **REVIEWER:** IDEQ

ITEM NUMBER	SECTION NUMBER	PAGE NUMBER	COMMENT	RESOLUTION
52)	<u>Section 2, Table 2-1</u>	<u>Page 11</u>	<u>EDF 1540</u> Column heading "Regulatory Limit" incorrect measurement used. Should read (mg/L).	Clarification will be made to the 30% design. The text was revised to read "(mg/L)".
53)	<u>Section 2</u>	<u>Page 12, Example 1, Step 1, Third Sentence</u>	<u>EDF 1540</u> This sentence reads in Part: "...the waste stream is potentially hazardous." Per 40 CFR 261.24(b), Chromium (D007) <u>is</u> hazardous. The word "potentially" should be deleted.	The word "potentially" will NOT be deleted from the text. If the waste stream fails the "20 x rule" (step 1) it is only potentially hazardous. The waste is not classified hazardous until it fails a TCLP. In other words, if the sample fails the 20 times rule, there is only a possibility that it would fail a TCLP. On the other hand, if the sample passed the 20 times rule it is highly unlikely that it would fail a TCLP. The 20 x rule is a conservative estimate.
54)	<u>Section 2,</u>	<u>Page 13, Example 3, Step 2, Fourth Sentence</u>	<u>EDF 1540</u> The units of measurement are incorrectly stated. This should read: 110 mg/kg <120 mg/kg.	Clarification will be made to the 30% design. The text was revised to read "110 mg/kg <120 mg/kg".

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55)	<u>Section 3.</u>	<u>Page 16, First Sentence and Second Sentence</u>	<p>EDF 1540</p> <p>In accordance with 40 CFR 261.30, the first sentence should read: "A solid waste is a hazardous waste if it is listed in this Subpart, unless it is excluded from this list under 40 CFR 260.20 and 40 CFR 260.22." The second sentence contains a typographical error. Change <u>proceeds</u> to precedes.</p>	<p>Clarification will be made to the 30% design. Text will be revised to read "A solid is a hazardous waste if it is listed in 40 CFR 261.31, Subpart D, Lists of Hazardous Wastes, unless it is excluded from this list under 40 CFR 260.20 and 40 CFR 260.22."</p> <p>The word "proceeds" was replaced with "precedes".</p>
56)	<u>Section 3.1.</u>	<u>Page 17, Second Paragraph</u>	<p>EDF 1540</p> <p>The assumption that WAG 3 soils at CPP-97, -98 and -99d, which carry F001, F002, F005 and U134 waste codes, do not require treatment for F-listed organic constituents is questionable. The facility should sample and provide analyses.</p>	<p>Clarification will be made to the 30% design. The sentence: "Future analysis may be required prior to the acceptance at SSSTF/ICDF facility." was added to the end of paragraph.</p>
57)	<u>Section 3.3.</u>	<u>Page 18 of 155</u>	<p>EDF 1540</p> <p>The statement that "<i>This site has been given a no longer contained in determination from the state and EPA,</i>" requires modification. First, No Longer Contained in determinations (NLCI) are made at the sole discretion of the IDEQ. Secondly, the NLCI determination does not apply to the entire site. The August 16, 2000 No Longer Contained-in (NLCI) determination associated with the TSF-26 site was limited to soils already excavated in three stockpiles and one wooden box. The determination does not apply to any future remediation efforts at this site which may include additional soil excavation and tank sludge removal.</p>	<p>Clarification will be made in the 30% design. The text in the first sentence: "state and EPA" will be replaced with "IDEQ". Additionally, this Section will be modified to reflect the "no longer contained in" determination, pertains only to soils already excavated in three stockpiles and one wooden box. The text will also state that the INEEL is in the process of extending the "no longer contained in" determination to the entire TSF-26 site.</p>

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58)	<u>Section 7.3,</u>	<u>Page 25 of 155, Third Sentence</u>	<p>EDF 1540</p> <p>It is unclear what is intended by the assertion that “<i>there are no organic concerns for this purge water . . .</i>” However, note that purge waters from the wells sampled under OU 3-14 RI contain F-listed hazardous wastes, and therefore must be managed as hazardous wastes.</p>	Clarification will be made in the 30% design. The sentence: “There are no organic concerns for this purge water, but inorganics are likely, as well as radioactive constituents from secondary sources.” was deleted and replaced with “Waste streams will be characterized and managed appropriately.”
59)	<u>Appendix C</u>		<p>EDF 1540</p> <p>a) The August 16, 2000 No Longer Contained-in (NLCI) determination associated with the TSF-26 site was limited to soils already excavated in three stockpiles and one wooden box. The determination does not apply to any future remediation efforts at this site which may include additional soil excavation and tank sludge removal.</p> <p>b) There has been no NLCI determination for TSF-9/18. Please correct this table.</p>	<p>a) See Resolution to Comment #57.</p> <p>b) Clarification will be made in the 30% design. The text will be revised to replace “Has received a no longer contained in determination” with “Below LDR treatment standards”</p>
60)	<u>Appendix F</u>	<u>Page 127</u>	<p>EDF 1540</p> <p>The Universal Treatment Standards (UTS) table omitted several constituents from “Oxamyl” through “Propham”. Why were these 21 UTS constituents omitted?</p>	Clarification will be made to the 30% design. The constituents from Oxamyl through Propham were added to the table.
61)	<u>Appendix I</u>		<p>EDF 1540</p> <p>The IDEQ supports a site-specific treatment variance requested for non-liquid wastes assigned the U134 (hydrogen flouride) hazardous waste code as described in an IDEQ letter of August 25, 1999. IDEQ</p>	So noted. As per the December 11 and 12 conference call, this issue is being further evaluated by IDEQ.

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			will continue to facilitate implementation and refinement of this U134 site-specific treatment variance by conducting required public participation activities prior to the actual on-site disposal. Should the results of these public participation activities prove overwhelmingly negative, this site-specific treatment variance may be rescinded.	
62)		<u>Page 5, Second Paragraph, Third Sentence</u>	<u>EDF 1542</u> The SSSTF is described as a "confinement structure". This term is too vague. It should be termed "containment building" and the requirements of §264.1100 (Subpart DD) should apply.	No change to the 30% design. The use of the term "confinement structure" is used to distinguish a particular radiological concern. Use of the term "containment" in the radiological arena requires more stringent requirements. 40 CFR 264.1100 is an ARAR and will be complied with.

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63)	<u>Section 3</u>	<u>Page 7, Seventh bullet, Fourth Sub-bullet & Page 8, Multiple Bullets</u>	<u>EDF 1542</u> The term "compressive strength" is used to as a test measure (50 psi) for cured samples. Compressive strength needs to be defined (i.e., treated waste has sufficient structural integrity for landfill disposal) and the calculations to derive the 50 psi should be included.	Clarification will be made in the design. The requirement for 50 psi unconfined compressive strength has been eliminated as a treatment criterion. This criterion originally was included when DOE was discussing discharging a liquid grout slurry to the landfill. As discussed in OSWER Guidance, 9847.002A, this is a requirement for stabilized liquids. Since the SSSTF is no longer stabilizing liquids, it is no longer applicable unless it is identified as a WAC requirement.
64)	<u>Section 3</u>	<u>Page 8, Sixth Bullet</u>	<u>EDF 1542</u> This sentence reads in part: "The stabilization waste may be confined within containers...". This sentence needs to clarify that the containers will remain closed following completion of the stabilization process.	Clarification will be made in the 30% design. Text was added to the sixth bullet stating: "The containers will remain closed after completion of stabilization process until placement into the landfill." .
65)	<u>Section 4.6, Product Waste From Acceptance Criteria</u>	<u>Page 10 of 80, Second Bulleted Item.</u>	<u>EDF 1542</u> "Waste product exhibits a minimum compressive strength of 50 psi." Please include a reference to the test method for this standard. The methods for TCLP and Paint Filter tests are given in this section	See Resolution to Comment #63.
66)	<u>Section 5, INEEL Soil Types, Table 5-1,</u>	<u>Page 12 of 80</u>	<u>EDF 1542</u> ASTM D2166-98a Standard Test Method for Unconfined Compressive Strength of Cohesive Soil states that, " Dry and crumbly soils, fissured or varved materials, silts, peats, and sands cannot be	See Resolution to Comment #63.

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			tested with this method to obtain valid unconfined compression strength values. Table 5-1 identifies soil types at the INEEL in two ways, surface layer/second layer. Are the identified soil types “as excavated”, considered cohesive or are they expected to become cohesive only after stabilization? Is the omission of compressive strength methods intentional and pending on the Stabilization Testing results?	
67)	<u>Section 6, PROCESS ALTERNATIVES</u>	<u>Page 14 of 80, Fifth Bulleted Item</u>	<u>EDF 1542</u> <u>“Diadochy”</u> This term is not defined; please include the definition in the text. However, in the literature available, it is a selective transition metal cation uptake function of anionic clays.	Clarification will be made in the 30% design. The text was revised to add the definition.
68)	<u>Section 8, STABILIZED MIXTURE FORMULATION</u>	<u>Pages 17 and 18 of 80, The issues relevant for the Stabilization treatment process, Bulleted Items</u>	<u>EDF 1542</u> 1. “Cadmium. Cadmium (Cd) forms stable complexes with ammonia, cyanide, and halides. Cd will not precipitate in alkaline solution if cyanide is present. Cd is very sensitive to pH and will leach out significantly if the pH < 7. However, the TCLP does not overcome the alkalinity of most CFS systems except at low MRs. Cd is not bound into the silica matrix like lead and chrome. In some systems, Cd may be sorbed or fixed by cation exchange using the following: Kaolin Clay 0.05 mg/g Flyash 0.22 mg/g Sawdust 0.11 mg/g” The entries for Cr and Pb both reference the remarks about Cd. However, Pb and Cd are both elements that are suspected to re-speciate in a silicate matrix. If the development of a universal CFS system for all waste needing stabilization is the objective, it may result in over treating the waste. Waste type specific	1. No change to the 30% design. A single stabilization recipe will be developed for all wastes targeted for treatment at the SSSTF as described in the Treatability Study Work Plan. It is agreed that a single generic recipe will likely result in “over treatment” in that excess reagents may be used. The reagents that will be utilized are relatively inexpensive. The cost of further optimizing the process to reduce reagent use is not justified. 2. Clarification will be made in the 30% design. Discussions of Ba, Ag and Se will be added to the

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			<p>treatment is known to save reagent cost. The waste treatment study, when scaled up to the stabilization basin level, will present waste type specific relevant issues to be considered. A "Generic" CFS recipe, for each waste type, would better serve the SSSTF.</p> <p>2. In this section, the obstacles are listed for five elements of concern. Was Ag and Se omitted because there are no relevant issues concerning the stabilization process for these elements? Please include these elements in the list of relevant issues</p>	30% design.
69)	<p><u>Section 8, STABILIZED MIXTURE FORMULATION</u></p> <p><u>Section 9, STABILIZATION PROCESS CONSIDERATIONS</u></p>	<p><u>Page 19 of 80, Last Paragraph</u></p> <p><u>Page 20 of 80</u></p>	<p><u>EDF 1542</u></p> <p>"Currently 262,450 gal of WAG 3 purge-development water have been identified for disposition through the SSSTF/ICDF and could be utilized as a possible stabilization makeup water sources. Other water sources could include decon water from process and component decontamination, and ICDF leachate."</p> <p>"Salt and organic constituents in the soil may have detrimental effects on the reactions for fixation contaminants."</p> <p>Chloride and organics collected during the production of decon waters and leachates need to also be evaluated for any detrimental effects on chemical fixation.</p>	<p>Clarification will be made in the 30% design. The last paragraph of Section 8 was deleted from the text.</p> <p>As discussed in the December 11 and 12 conference call, the use of any type of waste water in the stabilization process has been eliminated. Only raw water will be used in the stabilization process.</p> <p>Potential salts and organic soil constituents will be evaluated in the treatability study.</p>

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70)	<u>Section 9, STABILIZATION PROCESS CONSIDERATIONS, Considerations for stabilized waste mixtures</u>	<u>Pages 19 and 20 of 80</u>	<p><u>EDF 1542,</u></p> <p>a)This section, in paragraph one, describes the possible physical descriptions of stabilized waste as follows: "Variations include stabilized waste forms which closely or resemble the original matrix material, more closely resemble a solidified grout or concrete type product, or resemble a product between the two such as a crumbly, damp, different-colored product." These variations may affect the cohesive strength of the stabilized material. This issue needs to be considered with regards to the 50 psi unconfined compressive strength requirement. In addition, the successful degree of homogeneous mixing is large component of successful chemical stabilization.</p> <p>b)Large rocks, assumed basalt, may jam in-line mixers or other close tolerance machinery. In this consideration, the definition of "Large rocks" lacks a size tolerance. It is assumed to mean greater than 5 inches, however smaller rocks can wedge together and produce a similar problem.</p> <p>c)The statement, "Dust loading (excess) in soil will absorb water instead of cement, therefore need to know the amounts of very fine particles." Is true, however, soils with <16% moisture will present a "dusting issue" in the SSSTF.</p>	<p>a) See Resolution to Comment #63.</p> <p>b) So noted. This process was not selected.</p> <p>c) See Resolution to Comment #34.</p>
71)	<u>Section 10.1</u>	<u>Pages 21 & 22</u>	<p><u>EDF 1542,</u></p> <p>The equipment identified in System Alternatives 1-3 should be regulated under §264.600 as Miscellaneous Units.</p>	So noted. These are not the selected alternatives. If these alternatives were chosen Subpart X would apply.
72)	<u>Section 10.1</u>	<u>Pages 22 , System Alternative 4: Mixing Basins</u>	<p><u>EDF 1542</u></p> <p>If System Alternative 4 is employed, the mixing basin should be regulated as a tank, per §264.190 (Subpart J-Tank System).</p>	So noted.

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73)	<u>Section 11.2, Calculations and Basis</u>	<u>Page 25 of 80</u>	<p><u>EDF 1542,</u></p> <p>“Size basin for 35-45 yd³ (9 x 15 x 8 ft = 40 yd³) to allow adequate room for mixing.</p> <p>This is a good recommendation. However, it conflicts with Section 3.3, Waste Treatment Function, #5 and Notes: Page 3-14 of the SSSTF 30% design.</p> <p>“5. The SSSTF mixing basin shall have a treatment capacity of 30 yd³ (including wastes and reagents).”</p>	See Resolution to Comment #27.
74)	<u>Section 12., RESULTS SUMMARY</u>	<u>Page 28 of 80, Seven and Eight Bulleted Items</u>	<p><u>EDF 1542</u></p> <p>“The stabilized mixture will be placed in lined containers (13 yd³) for confinement and transfer to the landfill.”</p> <p>“Based on 75% waste loading, the transfer of stabilized soil mixture will result in lading 6 roll-on/roll-off for transport to the ICDF.”</p> <ol style="list-style-type: none"> 1. Bulleted item seven is confusing. Are the containers 13 yd³ or are they 20 yd³ capacity containers. For bulleted item eight to be true and item seven refers to 20 yd³ capacity containers, then the quantity of 16.25 yd³ of the stabilized mixture will be placed in lined containers. 2. The usage of a dust suppression system indicates the presence of free liquids within the containment building and hence, will require adherence to the requirements of §264.1101(b). 	<ol style="list-style-type: none"> 1. Clarification will be made in the 30% design. The text was revised to change “13 yd³” to “20 yd³”. The roll-on/roll-off containers have a volumetric capacity of 20 yd³ but their capacity is based on weight, which is estimated to average 13 yd³ of in-place waste. (i.e. 13 yd³ of waste in the inventory may take up more actual volume due to fluffing, but is left as 13 yd³ in the calculations). See Resolution to Comment #27. 2. No change to the 30% design. Use of nonhazardous liquids for dust suppression purposes is

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				<p>specifically mentioned in the guidance as not being subject to restrictions of Section 3004(c)(3) per 27 APR 1986 MEMORANDUM</p> <p>SUBJECT: Regulatory Interpretation of Ban on Use of Liquids in Landfills</p> <p>FROM: Marcia E. Williams, Director</p> <p>Office of Solid Waste (WH-562)</p> <p>TO: David A. Stringham, Chief Solid Waste Branch (5HS-13) Region V</p>
75)	<u>Section 12</u>	<u>Pages 28, Tenth & Eleventh Bullets</u>	<p><u>EDF 1542,</u></p> <p>These Bullets contain reference to a "confinement" area. Does this refer to the containment building as a whole or only to the stabilization mixing basins? This needs clarification.</p>	<p>Clarification will be made in the 30% design. The bullet was revised to include a definition of confinement as used in the radiological control sense.</p> <p>See Resolution to Comment #62.</p>
76)	<u>Section 12., RESULTS SUMMARY</u>	<u>Page 28 of 80, Eleventh Bulleted Item</u>	<p><u>EDF 1542</u></p> <p>"The confinement will be ventilated with air, run under slightly negative pressure, and the exhaust air filtered through pre-filters and final high-efficiency particulate air (HEPA) filters."</p> <p>The atmosphere in the confinement will be very humid because of dust suppression techniques and the liberation of water vapor during pozzolanic reactions. In addition, the negative pressure will allow for the importing of contaminants from outside the confinement. Will these factors be considered in the design and construction of the air</p>	<p>No change to the 30% design. All ventilation and confinement issues will be clarified during 90% design.</p>

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			handling equipment?	
77)	<u>Appendix C, System Requirements</u>	<u>Page 59 of 80, Requirement 15</u>	<p>EDF 1542</p> <p>“15. Stabilized waste must have a compression strength of at least 50 psi prior to disposal.”</p> <p>Compression strength and unconfined compressive strength are two different measurements. Please standardize the terminology for this requirement throughout the text. In addition to standardizing the terminology, a test method reference is appropriate when referring to this requirement.</p>	See Resolution to Comment #63. This was a criteria used in the evaluation of system alternatives described in Appendix C.
78)	<u>Appendix C, System Requirements</u>	<u>Page 60 of 80, Quality Control</u>	<p>EDF 1542</p> <p>Please also include a bulleted item, such as <i>Success rate from Treated Waste sample verification results</i>.</p>	No change. This was included in the evaluation under Quality Control (i.e., mixing effectiveness and process consistency.)
79)	<u>Attachment #1, Soils stabilization Treatment Alternative Sketches</u>	<u>Pages 71-74</u>	<p>EDF 1542</p> <p>1- Each of the four alternatives is sketched in this section. One common feature is that all of the waste receipts (roll-on/roll-off box unloading) are through an open door. If this confinement area is to operate in a slight negative pressure, the area is exposed to potential “contamination” from the environment outside of the confinement area. The door open will also stress the air handling equipment needed to maintain a slight negative pressure.</p> <p>2- Sketches 71 and 72 have screens to split off the debris contained within the roll-on/roll-off box. Please note that these screens will need to vibrate if they are to be effective when receiving a “live load”.</p> <p>3- Alternative 4 does not employ a screen for oversized material. How will debris be handled?</p> <p>4- Alternatives 1 and 2, as documented in Appendix C pages 61 and 62 state that the, “waste from the roll-off would be discharged slowly”</p>	<p>1. Clarification will be added to the 30% design. The text : “For each alternative, the design intent in order to meet confinement criteria is to provide a facility interface at the area of transport unloading. This interface will provide control of ventilation air and confinement pressure.</p> <p>An interface between the exterior and the interior will be included in the RD/RA Work Plan design documentation. This interface will control airflow and pressure</p> <p>2. The design criterion for the</p>

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			onto the screen. How will this be regulated? Stokes Law dictates that material will fall at a rate of 9.8 (gravitational constant) meters per second minus the viscosity (in this case friction as a result of loading on the roll-off floor). How is slowly defined and how will a typical hoist trailer control the discharge of waste?	<p>evaluation of alternatives was to treat contaminated soils with particle sizes less than or equal to 5 inches nominal diameter. Treatment of debris was specifically excluded from the design and evaluation. However, clarification was added to the descriptions of Alternatives 1 and 2 stating: "The screen may need to vibrate to segregate material."</p> <p>3. No change to the 30% design. This issue will be discussed in the Debris Treatment Plan currently being developed and in the RD/RA Work Plan. Alternative 4 includes inherent capability to remove oversize material by pick and place methods for subsequent special case treatment.</p> <p>4. Clarification will be added to the 30% design. The word "slowly" was deleted from the screen description.</p> <p>It is difficult to control the rate of discharge of material by dump methods. However, these alternatives were not selected for 90% design,.</p>

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80)	<u>Section 5.</u> <u>Summary</u>	<u>Page 2 of 20,</u> <u>Container</u> <u>Evaluation,</u> <u>Bulleted Items</u>	<u>EDF 1543</u> Why wasn't ease/efficiency of decontamination utilized?	No change to the 30% design. This issue will be addressed in the RD/RA Work Plan.
81)	<u>DEFINITIONS,</u> <u>TSCA Regulated</u> <u>Waste</u>	<u>Page 7 of 20</u>	<u>EDF 1543</u> "TSCA Regulated Waste. Under TSCA waste items containing PCBs greater than or equal to 50 ppm will require management as PCB remediation waste. If waste is <50 ppm, the waste does not require management under the TSCA ARARs. Note that soils are considered to be remediation wastes will <i>be</i> managed based in the concentrations at which the PCBs are found. Soils exhibiting levels greater than 50 ppm will be TSCA-regulated." Please indicate the Reference Source of this determination.	Clarification will be made in the 30% design. The reference source was added in the last sentence stating: "Based on 40 CFR 761.50(b)(3) PCB Remediation Waste."
82)	<u>Section 2.,</u> <u>WASTE</u> <u>STREAMS</u>	<u>Page 11 of 20</u>	<u>EDF 1543</u> Review of Table-1, leads the reader to believe these Debris Wastes are to be stabilized. Is this true?	No changes in the 30% design. This issue will be addressed in the Debris Treatment Plan currently being developed.

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83)	<u>Section 3.2.3, Container Costs and Useful Capacities, Table 2</u>	<u>Page 13 of 20, First Paragraph</u>	<p><u>EDF 1543</u></p> <p>“The Table 2 summarizes the cost for each of the containers and their useful capacities. The 55- gal drum is capable of being filled to capacity. The useful capacities of the wooden boxes and supersacks are based on 80% of the full capacity to allow for a safety factor in maintaining the structural integrity of the containers. The dump truck’s and roll-off container’s useful capacities are based on standard DOT vehicle weight restrictions for each using a basis of 120 lb/ft³ soil density.”</p> <p>Please explain this value. The preceding Table 1, list items/materials, by their inherent nature that have a wide range of densities.</p>	Clarification will be made in the 30% design. A sentence was added to the end of the paragraph stating: “The 120-lb/cu. ft is a conservative average of the density of the materials to be received for stabilization.”
84)	<u>Section 5., EVALUATION OF CONTAINERS, Table 5</u>	<u>Page 17 of 20, “Ease of Container Disposal</u>	<p><u>EDF 1543</u></p> <p>It is assumed that the objective is “Ease of Container <i>Contents</i> Disposal.</p>	<p>Clarification will be made in the 30% design. The text in the table was changed from “Ease of Container Disposal” to “Ease of Disposal of Waste Containers”.</p> <p>The disposal of container contents was not evaluated separately.</p>
85)	<u>Section 3.1.2</u>	<u>Page 10</u>	<p><u>EDF 1544</u></p> <p>The paint filter test is listed as Method 9095. The current Method is <u>9095A</u></p>	Clarification will be made in the 30% design. The text will be revised to “Method 9095A”

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86)	<u>Section 3.3.1, Non-aqueous Waste</u>	<u>Page 12 of 34, Bulleted Item 6</u>	<p><u>EDF 1544</u></p> <p>Waste Profile Verification and fingerprinting is required by this item. How will non-intrusive methods of fingerprinting determine characteristic RCRA properties of the waste to be shipped? The full list of fingerprinting parameters will be required to determine what tools are required and how access to them is facilitated (calibrated scales for paint filter tests for free liquids, pH testing equipment and procedures, debris content evaluation etc.).</p> <p>This list of fingerprint parameters will also help drive the requirements for the laboratory facility at the SSSTF. This facility is not contemplated in the documentation, however the SSSTF is required to characterize waste. Where will they meet this obligation?</p>	See Resolution to Comment #7.
87)	<u>Section 3.3.2, Treated Waste Verification</u>	<u>Pages 17 and 18 of 34, Last Paragraph on Page 17, continued on Page 18</u>	<p><u>EDF 1544</u></p> <p>“Verification that treated waste meets the ICDF Landfill WAC will be focused on confirmation that the waste has been sufficiently stabilized to meet RCRA Land Disposal Restrictions (LDRs). The frequency of verification samples for each treated waste stream will depend on the variability of the untreated waste stream for contaminants of concern (TCLP results for heavy metals). It is anticipated that the treatability studies will develop a “standard recipe” that will be robust enough to ensure all waste will meet the LDRs. Therefore, the verification sampling will also ensure that the treatment recipe remains stable and effective.”</p> <p>The waste materials outside of WAG 3 that are designated for stabilization treatment, have differing concentrations of COCs. A “standard recipe” for each type of waste is suggested (Hg will include sulfur compounds) for specific COC variance. Reliance on a single standard recipe will result in increased costs for reagents, reagent storage and handling of waste materials and increased treatment</p>	<p>No Change to the 30% design. As noted in discussions of the Treatability Study and in response to comments, the reagents that will be utilized are relatively inexpensive. The Treatability Study will treat a worst case waste, this recipe will not be modified to treat wastes that are less contaminated.</p> <p>See Resolution to Comment #7.</p>

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			reaction times. Prior to stabilization, the waste fingerprint and observations made during waste excavation should be reviewed. Based upon the review and historical data collected for the waste stream, one of the standard recipes will be selected. The goal of the SSSTF is to handle the waste once prior to disposal in the ICDF. One would not use a Hg recipe for Pb.	
88)	<u>Section 3.3.2</u>	<u>Page 17, Third Bullet, Second Sentence</u>	<u>EDF 1544</u> The assumption is made for verification sampling at a ratio of 1:20. This proposed proportion of sampling seems inappropriate. Each load should be tested, regardless of the homogeneity of the waste.	Clarification will be made in the 30% design. The sentence "For current planning purposes..." has been deleted from the text. Treatment verification issues will be addressed in the RD/RA Work Plan documentation.
89)	<u>Section 3.3.2</u>	<u>Page 17, Fourth Bullet</u>	<u>EDF 1544</u> This bullet proposes that waste from batches <u>not</u> sampled will be permanently disposed in the ICDF landfill. The logic is faulty. All of the treated waste stream or campaign, including the sampled load, should be held in "interim storage" for back-end testing. Until LDR verification (§268.40), no waste can be disposed in the landfill.	Clarification will be made in the 30% design. The fourth bullet was revised to read: "Treated waste is staged pending TCLP analytical results (box 4)." The flow chart (Fig. 3-2) was also revised to indicate waste will not be permanently disposed in the ICDF until the TCLP results are known for the treated waste stream.
90)	<u>Section 3.3.2</u>	<u>Page 17, Fifth Bullet</u>	<u>EDF 1544</u> This bullet proposes to return the failed-test sample load to be re-treated but doesn't mention the remainder of the waste stream. All	Clarification will be made in the 30% design. The fifth bullet was deleted

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			treated waste from waste stream that fails back-end testing must be retreated.	and the sixth bullet was revised to read. "When analytical results confirm that treated waste meet the ICDF WAC, (box 5) the treated waste stream will be permanently disposed in the ICDF landfill Cell (box 6). Otherwise, the treated waste stream is returned to the SSSTF for re-treatment or for packaging and shipment off-site (box7). Figure 3-2 and related discussion was modified to show treated waste stream is re-treated or shipped off-site.
91)	<u>Section 3.2.2, Treated Waste Verification</u>	<u>Pages 17 and 18 of 34, First Paragraph on Page 18</u>	<u>EDF 1544</u> "For soils sites, the waste will be homogenized during the various material handling activities (excavation and loading, unloading, and treating). The percentage of batches of any given treated waste stream will depend on both the waste stream variability (discussed in Section 3) and the size of the waste stream. For small waste streams, sampling of even one batch may effectively be 100% of the treated waste. For large waste streams, the frequency of sampling of treated batches will be determined statistically based on waste variability. Because the objective of waste stream sampling is to determine if the average concentration of the waste stream meets the requirements, composite sampling of treated batches will be used. Further development of the treated waste verification procedures will be included in the Waste Analysis Plan." 1. How will debris and rocks greater than five inches be segregated	1. See Resolution to Comment #11. See Resolution to Comment #82. 2. Comment deleted per IDEQ direction on December 12 Conference call.

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			from soils using the mixing basin process? 2. For LDR regulated waste streams, are average waste verification analysis considered acceptable? For WAG-3 waste, achieving the 90% reduction in leachable metals based on average sample analysis is very appropriate, because LDR requirements are not applicable.	
92)	<u>Section 3.3.2</u>	<u>Page 18, First Paragraph, Fifth Sentence</u>	<u>EDF 1544</u> The facility proposes composite sampling of the treated waste but fails to detail the procedure. At a minimum the sampling should include the top, middle and bottom of the mixing basin to ensure that a representative composite sample is obtained.	No change will be made to the 30% design document. This issue will be addressed in the Draft RD/RA Work Plan and associated QA Plan.
93)	<u>Section 5., OPERATING ASSUMPTIONS</u>	<u>Page 21, Number 5</u>	<u>EDF 1544</u> “5. ICDF landfill leachate and ICDF Complex decontamination water will go directly to the EP.” These wastes must be verified to meet the EP WAC before their addition to the EP.	Clarification will be made in the 30% design. Item #5 was revised to read: “ICDF landfill leachate and ICDF Complex decontamination water will be demonstrated to meet the EP WAC prior to discharge into the EP. Development of the EP WAC will be part of the ICDF submittals.
94)	<u>Appendix B, Draft, ICDF Complex Disposal Verification Data Quality Objectives</u>	<u>Page 31 of 34, Second Paragraph in Section 1: State the Problem, Second</u>	<u>EDF 1544</u> Tenth Bulleted Item in 4: Define the Study Boundaries “No free liquids for nonaqueous wastes will be accepted” Will nonaqueous waste with free liquids designated for stabilization and solidification not be accepted. To desiccate a waste stream and then hydrate the same waste stream would require extensive additional	No change to the 30% design. This will be addressed in the ICDF Complex Operation Plans. Procedural controls will eliminate this issue.

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		<u>Paragraph Under SSSTF/ICDF Complex Mission and, Section 4, Define the Study Boundaries</u>	handling of the waste.	
95)	<u>Appendix B, Draft, ICDF Complex Disposal Verification Data Quality Objectives</u>	<u>Page 33 of 34, 3. Identify Inputs to the Decision, PSQ-3, WAG 3 and Non WAG 3 based</u>	<u>EDF 1544</u> Are PCBs intentionally not considered?	No change for the 30% design. PCBs have been considered, as noted in other sections of the documents. See Resolution to Comment #23.
General Comment – EDF 1547				
96)			EDF 1547 does not adequately consider stormwater management. In particular the management of an additional waste stream associated with contaminated stormwater in the event of a release or under system an upset condition is not considered.	No change to the 30% design. Except for the contaminated equipment storage area, storm water from the SSSTF will drain off the SSSTF and will be managed in compliance with the Storm Water Management Plan or Storm Water Pollution Prevention Plan that will be included in the RD/RA Work Plan. Drawing C-1 details draining of the contaminated equipment area to the decontamination water system, then

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				<p>to the Evaporation Pond or treatment (if the water doesn't meet the EP WAC)</p> <p>Waste will only be stored in containers with secondary confinement. There will not be storage of waste in uncovered piles or containers, therefore contaminated storm water will not be generated.</p> <p>The design includes secondary containment as part of the container and does not rely on pads. Therefore, there is no intent to use surface pads for containment. Up-set conditions will be handled according to spill prevention and control procedures.</p>
97)			A more accurate estimate could be achieved if the production rates at other government and commercial disposal sites are compared.	No change to the 30% design. An operations manager has been added to the team to help ensure that the processing times and manpower estimates are accurately estimated and further refined. Further review of process rates at other facilities is planned in the RD/RA Work Plan.
98)			The time requirements to perform individual tasks have been underestimated. The time estimates are unrealistic based on the number of personnel to perform each task. The numbers were picked because they divided into the total volume processed in a day with no	No change to the 30% design. An evaluation of the time and motion